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## 1 The macro model for data compression (Extended Abstract)

James A. Storer, Thomas G. Szymanski

May 1978

Proceedings of the tenth annual ACM symposium on Theory of com

Full text available: pdf(771.10 KB)

Additional Information: full citation, abstract, references,

A general model for data compression is presented which includes most data ( special cases. All macro schemes are based on the principle of finding redundancies by pointers to a common copy. Different varieties of macro schemes make different interpretation of pointers, for instance, a pointer may indicate a substring of the original string, or a substring of some ...

## 2 Compactly encoding unstructured inputs with differential compression

Miklos Ajtai, Randal Burns, Ronald Fagin, Darrell D. E. Long, Larry Stockmeyer

May 2002

Journal of the ACM (JACM), Volume 49 Issue 3

Full text available: pdf(348.32 KB)

Additional Information: full citation, abstract, references,


The subject of this article is *differential compression*, the algorithmic task of finding redundancies in data and using them to encode one version compactly by describing it as a sequence of changes. A main goal of this work is to present new differencing algorithms that (i) operate on arbitrary input (of change), (ii) make no assumptions about the format or alignment of input (of change), (iii) use constant space ...

Keywords: Delta compression, differencing, differential compression

### 3 In-place reconstruction of delta compressed files

Randal C. Burns, Darrell D. E. Long

June 1998 Proceedings of the seventeenth annual ACM symposium on Principles of Computer Systems (POCS)

Full text available:  pdf(1.18 MB)

Additional Information: full citation, references, citations, index

### 4 Delta algorithms: an empirical analysis

James J. Hunt, Kiem-Phong Vo, Walter F. Tichy

April 1998 ACM Transactions on Software Engineering and Methodology (TOSEM)

Full text available:  pdf(388.07 KB)

Additional Information: full citation, abstract, references,

Delta algorithms compress data by encoding one file in terms of another. This number of situations: strong multiple versions of data, displaying differences, storing backups, transmitting video sequences, and others. This article studies delta algorithms, using a benchmark of over 1,300 pairs of files taken from two Results indicate that modern ...

Keywords: benchmark, delta encoding, differencing

### 5 Datapath and control for quantum wires

Nemanja Isailovic, Mark Whitney, Yatish Patel, John Kubiawicz, Dean Copsey, Mark Oskin

March 2004 ACM Transactions on Architecture and Code Optimization (TACO),

Full text available:  pdf(476.83 KB)

Additional Information: full citation, abstract, reference

As quantum computing moves closer to reality the need for basic architectural Quantum wires, which transport quantum data, will be a fundamental component architectures. Since they cannot consist of a stream of electrons, as in the classical fundamentally be designed differently. In this paper, we present two quantum swapping of adjacent qubits, and a teleportation wire, ...

Keywords: Architecture, Control, Layout

6 Mobile data management: Mimic: raw activity shipping for file synchronization

Tae-Young Chang, Aravind Velayutham, Raghupathy Sivakumar

June 2004 Proceedings of the 2nd international conference on Mobile systems, a

Full text available:  pdf(334.54 KB)

Additional Information: full citation, abstract, referen


In this paper, we consider the problem of file synchronization when a mobile l server in a network file system. Several *diff* schemes have been proposed to i conventional file synchronization approaches which use full file transfer. These new file with respect to the old copy at the server and transfer the computed file-synchronization. Howev ...

Keywords: file synchronization, mobile file system, raw activity shipping

7 VRML molecular dynamics trajectories

Geoff Leach, James Gilbert

February 1999 Proceedings of the fourth symposium on Virtual reality modeling lai

Full text available:  pdf(2.25 MB)

Additional Information: full citation, references, index terms

Keywords: VRML, compression, molecular dynamics, scientific visualisation

8 Location-based services and mobile computing: algorithms: Vector map co

Shashi Shekhar, Yan Huang, Judy Djugash, Changqing Zhou

November 2002 Proceedings of the tenth ACM international symposium on Advanc

Full text available:  pdf(450.83 KB)

Additional Information: full citation, abstract, referen

Vector maps (e.g. road maps) are widely used in a variety of applications such Systems(GIS), Intelligent Transportation Systems(ITS) and mobile computing vector maps has in some cases negatively impacted their usage and applicatio storage available with mobile wireless devices or the limited bandwidth of the data compression techniques need to be applied on ...

Keywords: clustering, dictionary design, vector map compression

9 Algorithms and programming models for efficient representation of XML for

Neel Sundaresan, Reshad Moussa

April 2001 Proceedings of the tenth international conference on World Wide We

Full text available:  pdf(352.97 KB)



Additional Information: full citation, references, citings, index

Keywords: DOM, SAX, WBXML, XML, compression

## 10 Linguistic structure as composition and perturbation

Carl de Marcken

June 1996 Proceedings of the 34th conference on Association for Computation

Full text available:  pdf(661.17 KB)  Publisher Site

Additional Information: full ci

This paper discusses the problem of learning language from unprocessed text the problem of learning a lexicon. In particular, it argues for a representation parameters like words are built by perturbing a composition of existing param is demonstrated by several examples in text segmentation and compression, and the acquisition of mappings between te ...

## 11 Voice response systems

D L. Lee, F H. Lochovsky

December 1983 ACM Computing Surveys (CSUR), Volume 15 Issue 4

Full text available:  pdf(2.22 MB) Additional Information: full citation, references, index terms

## 12 Efficiency and scaling: Assigning identifiers to documents to enhance the c

Fabrizio Silvestri, Salvatore Orlando, Raffaele Perego

July 2004 Proceedings of the 27th annual international conference on Research ai

Full text available:  pdf(201.50 KB)

Additional Information: full citation, abstract, referen

Web Search Engines provide a large-scale text document retrieval service by I Inverted File indexes allow fast query resolution and good memory utilization effectively and efficiently compressed by using variable length encoding meth some algorithms aimed to find an assignment of the document identifiers whic d-gaps, thus enhanc ...

Keywords: clustering property, document identifier assignment, index compre

## 13 Engineering the compression of massive tables: an experimental approach

Adam L. Buchsbaum, Donald F. Caldwell, Kenneth W. Church, Glenn S. Fowler, :

February 2000 Proceedings of the eleventh annual ACM-SIAM symposium on Discr

Full text available:  pdf(932.72 KB)

Additional Information: full citation, references, citings, index te

**14 XML indexing and compression: XPRESS: a queriable compression for XM**

Jun-Ki Min, Myung-Jae Park, Chin-Wan Chung

June 2003 Proceedings of the 2003 ACM SIGMOD international conference on M

Full text available:  pdf(277.17 KB)

Additional Information: full citation, abstract, referen

Like HTML, many XML documents are resident on native file systems. Since XI disk space and the network bandwidth are wasted. To overcome the verbosity for XML data has been conducted. However, some XML compressors do not su other XML compressors which support querying compressed data blindly encoo encoding methods. Thus, the query performance on com ...

**15 MPEG-4: an object-based multimedia coding standard supporting mobile a**

Atul Puri, Alexandros Eleftheriadis

June 1998 Mobile Networks and Applications, Volume 3 Issue 1

Full text available:  pdf(747.80 KB)

Additional Information: full citation, abstract, references, citi

The ISO MPEG committee, after successful completion of the MPEG-1 and the on MPEG-4, the third MPEG standard. Originally, MPEG-4 was conceived to be complexity audio-visual scenes at very low bit-rates; however, in July 1994, i of scenes as a collection of individual audio-visual objects and enabling a rang supported by other standards. One of the ke ...

**16 CDNs and caching: Value-based web caching**

Sean C. Rhea, Kevin Liang, Eric Brewer

May 2003 Proceedings of the twelfth international conference on World Wide

Full text available:  pdf(168.62 KB)

Additional Information: full citation, abstract, references,

Despite traditional web caching techniques, redundant data is often transferre transfers result from both resource modification and aliasing. Resource modifi single URI to change; often, in transferring the new data, some old data is ret when the same data is named by multiple URIs, often in the context of dynam web caching techniques index data ...

Keywords: HTTP, WWW, aliasing, caching, duplicate suppression, dynamic cor privacy, proxy, redundant transfers, resource modification, scalability, world v

17 Versioning and fragmentation: Automatic detection of fragments in dynamic

Lakshmish Ramaswamy, Arun Iyengar, Ling Liu, Fred Dougli

May 2004

Proceedings of the 13th international conference on World Wide W

Full text available:  pdf(268.12 KB)

Additional Information: full citation, abstract, referenc

Dividing web pages into fragments has been shown to provide significant bene caching. In order for a web site to use fragment-based content generation, ho dividing web pages into fragments. Manual fragmentation of web pages is exp This paper proposes a novel scheme to automatically detect and flag fragment web sites serving dynamic content. We consider ...


Keywords: L-P fragments, dynamic content caching, fragment detection, fragr

18 JAZZ: an efficient compressed format for Java archive files

Quetzalcoatl Bradley, R. Nigel Horspool, Jan Vitek

November 1998

Proceedings of the 1998 conference of the Centre for Advanced S

Full text available:  pdf(73.54 KB)

Additional Information: full citation, abstract, references, c

The Jazz file format is intended to be a replacement for the JAR file format wh Java programs. A Jazz file is compressed to a degree that far exceeds what is of the Jazz format permits faster transmission speeds over a network and has storage. The compression is achieved as a combination of different data comp characteristics of collectio ...


19 Potential benefits of delta encoding and data compression for HTTP

Jeffrey C. Mogul, Fred Dougli, Anja Feldmann, Balachander Krishnamurthy

October 1997

ACM SIGCOMM Computer Communication Review , Proceedings of tl

Applications, technologies, architectures, and protocols for compute

Full text available:  pdf(2.00 MB)

Additional Information: full citation, abstract, references, ci

Caching in the World Wide Web currently follows a naive model, which assumi times between changes. The model also provides no way to update a cache er transferring the resource's entire new value. Several previous papers have pr transferring only the differences, or "delta," between the cached entry and the use of dynamic traces of the full contents of ...

20 Software III: Storing text using integer codes

Raja Noor Ainon

August 1986

Proceedings of the 11th coferece on Computational linguistic




Full text available:  pdf(272.03 KB)

Additional Information: full citation, abstract,

Traditionally, text is stored on computers as a stream of characters. The goal that facilitates word manipulation whilst reducing storage space. A word list w and words in a text are given two-byte integar codes that point to their respec implementation of the encoding scheme is described and the performance sta presented.

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Keywords: Delta compression, differencing, differential compression

## 2 An analysis of the longest match and the greedy heuristics in text encoding

Jyrki Katajainen, Timo Raita

April 1992

Journal of the ACM (JACM), Volume 39 Issue 2

Full text available: pdf(821.44 KB)

Additional Information: full citation, abstract, references, citi

Text compression is often done using a fixed, previously formed dictionary (cc substrings of the text can be replaced by code words. There always exists an ( problem. Due to the long processing times of the various optimal algorithms, the literature. In this paper, the worst-case compression gains obtained by the heuristics for various types of dictionaries is ...

Keywords: optimal and heuristic encoding, shortest paths, textual substitutor

### 3 Tools for visualizing text compression algorithms

Sami Khuri, Hsiu-Chin Hsu

March 2000

Proceedings of the 2000 ACM symposium on Applied computing

Full text available:  pdf(561.39 KB)

Additional Information: full citation, references, index ter

Keywords: adaptive Huffman coding, algorithms, dictionary encoding, text cor

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### 5 Compression, information theory, and grammars: a unified approach

Abraham Bookstein, Shmuel T. Klein

January 1990

ACM Transactions on Information Systems (TOIS), Volume 8 1

Full text available:  pdf(1.80 MB)

Additional Information: full citation, abstract, references, cit

Text compression is of considerable theoretical and practical interest. It is, for important for satisfying the requirements of fitting a large database onto a sir techniques discussed in the literature are model based. We here propose the r model of text generation that encompasses most of the models offered before possibility of compression to a ...

### 6 Efficient recompression techniques for dynamic full-text retrieval systems

Shmuel T. Klein

July 1995

Proceedings of the 18th annual international ACM SIGIR conference on information retrieval

Full text available:  pdf(870.44 KB)

Additional Information: full citation, references

## 7 Dictionary-based order-preserving string compression

Gennady Antoshenkov

February 1997 The VLDB Journal &mdash; The International Journal on Very Large

Full text available:  pdf(203.08 KB)

Additional Information: full citation, abstract, i

As no database exists without indexes, no index implementation exists without particular, without prefix and tail compression. However, despite the great potential, faster, application of general compression methods to ordered data sets has a demonstrates that the fast dictionary-based methods can be applied to order-same freedom as in the general case. The pro ...

Keywords: Indexing, Order-preserving key compression

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# **13 Posting compression in dynamic retrieval environments**

IJsbrand Jan Aalbersberg

September 1991 Proceedings of the 14th annual international ACM SIGIR conferen information retrieval

Full text available:  pdf(1.16 MB)

Additional Information: full citation, references, citings

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**16 The FINITE STRING Newsletter: Abstracts of current literature**

Computational Linguistics Staff

January 1987 Computational Linguistics, Volume 13 Issue 1-2

Full text available:  pdf(6.15 MB)  Publisher Site

Additional Information: full citation

**17 Document processing and transaction modeling: A multi-group technique for**

K. A. Hazboun, M. A. Bassiouni

June 1982 Proceedings of the 1982 ACM SIGMOD international conference on M

Full text available:  pdf(725.49 KB)

Additional Information: full citation, abstract, refer

An efficient compression technique that is particularly attractive for the storage and transfer of such files within a distributed communication network is outlined. A two-level hierarchy of Huffman-type binary trees, is a reversible semantic-independent encoding method that makes use of the group locality of character reference and the occurrence of various characters within the ...

Keywords: binary trees, character distribution, coding techniques, compression failure node, locality of character reference

**18 MPEG-4: an object-based multimedia coding standard supporting mobile a**

Atul Puri, Alexandros Eleftheriadis

June 1998 Mobile Networks and Applications, Volume 3 Issue 1

Full text available:  pdf(747.80 KB)



Additional Information: full citation, abstract, references, citi

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**19 Computing curricula 2001**

September 2001

Journal on Educational Resources in Computing (JERIC)

Full text available:  pdf(613.63 KB)  html(2.78 KB) Additional Information: full citation, references, citations, links**20 Optimizing document format: Compression of scan-digitized Indian language technique**

U. Garain, S. Debnath, A. Mandal, B. B. Chaudhuri

November 2003

Proceedings of the 2003 ACM symposium on Document eng

Full text available:  pdf(272.00 KB)

Additional Information: full citation, abstract, references




In this paper, a new compression scheme is presented for Indian Language (IL) technology for IL scripts is not matured enough, transcription of these documents techniques that achieve high degree of compression as well as suitable methods document indexing, retrieval, etc. The proposed method is essentially based on which has been realized with an efficient segmentation ...

Keywords: data compression, indian language, pattern matching, textual image

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